

GOVERNMENT’S ROLE

To address the immediate threat of landslides, WSDOT, BNSF railroad, Sound Transit, local jurisdictions, and other public agencies are working together to prevent landslides. WSDOT is stabilizing six locations in Snohomish County that were identified as having the highest risk for landslides and service disruptions for the Amtrak Cascades rail service.

FOR FURTHER INFORMATION

Residents in coastal bluff communities with questions about landslides should contact your local planning department. Visit the Department of Ecology website at: www.ecy.wa.gov/programs/sea/landslides

CITY OF EVERETT
425-257-8731
www.everettwa.gov

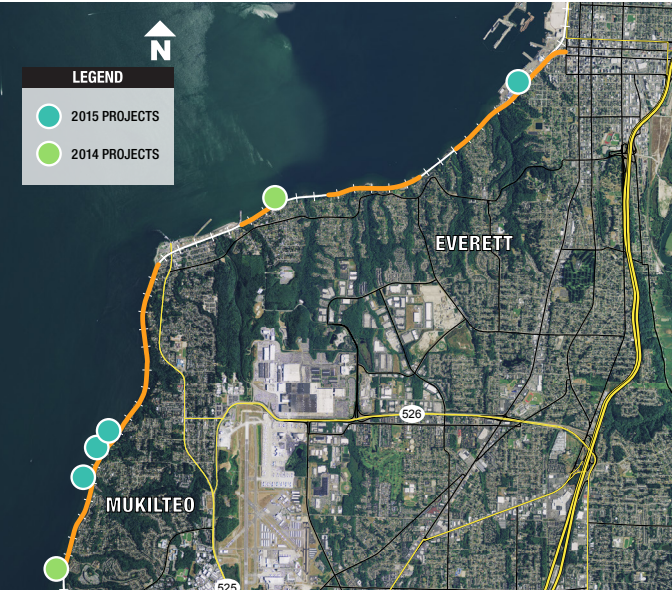
CITY OF SHORELINE
206-801-2531
www.cityofshoreline.com

CITY OF EDMONDS
425-771-0220
www.edmondswa.gov

TOWN OF WOODWAY
360-668-9531
www.townofwoodway.com

CITY OF MUKILTEO
425-263-8000
www.ci.mukilteo.wa.us

SNOHOMISH COUNTY
425-388-3311
www.snohomishcountywa.gov



RESOURCES

WASHINGTON STATE DEPARTMENT OF ECOLOGY
www.ecy.wa.gov/programs/sea/landslides

- Managing Drainage on Coastal Bluffs
- Managing Vegetation on Coastal Slopes
- Slope Stabilization and Erosion Control
- Puget Sound Landslides
- Puget Sound Shorelines
- Plant Selection Guide
- Slope Stability Maps

DEPARTMENT OF NATURAL RESOURCES
Division of Geology and Earth Resources
<http://www.dnr.wa.gov/ResearchScience/Topics/GeologicHazardsMapping/Pages/landslides.aspx>

U.S. GEOLOGICAL SURVEY
Landslides Hazard Program
www.landslides.usgs.gov

WASHINGTON MILITARY DEPARTMENT
Emergency Management Department
www.ernd.wa.gov

TELL US ABOUT YOUR CONCERNS

Please take our landslide survey:
www.surveymonkey.com/s/MZLJVX3



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15-06-0237

PROTECTING YOUR COASTAL BLUFF PROPERTY FROM LANDSLIDES



LANDSLIDES CAN COST YOU

Landslides on coastal bluffs are costly for landowners. If your property experiences one, it may result in:

- Loss of property value
- Increased insurance costs
- Damage to building structures
- Loss of land
- Clean-up and repair costs
- Liability for damage to others’ properties

COASTAL BLUFF LANDSLIDE FACTS

- More than 200 landslides occurred in the last ten years along the Seattle to Everett coastline
- An estimated 80 percent of landslides are related to human activities, including poor slope management and drainage problems
- In the last five years, more than 500 Amtrak Cascades trains have been cancelled or disrupted due to landslides.

MANAGING DRAINAGE

As a conscientious property owner, you can help avoid coastal bluff landslides by:

- Directing drainage away from steep slopes and the bluff crest, when possible
- Building drainage systems in compliance with local standards
- Connecting your drainage with drainage systems that are downslope, when possible
- Seeking professional help from geologists, engineers, and state and local agencies for questions and help
- Talking to your local public works department before planning your water drainage system

LANDSLIDE WARNING SIGNS

PROPERTY

- Bare soils, eroding slopes, cracks
- Mid-slope benches (level areas)
- Hummocky (mounding) and uneven ground
- Changes in roads, utilities or buildings
- Sagging or taut utility lines
- Foundation separating or cracking
- Growing cracks in walls or windows
- Broken or leaking water or sewer lines
- Doors or windows not closing properly
- Significant cracking of concrete slabs or pavement

VEGETATION

- Tilted or curved conifer trees
- Split trunks and stretched roots
- Large clusters of similar-aged trees (often alders)

WATER

- Small ponds on benches of slopes
- Disrupted natural drainage
- Unusually heavy or muddy seepage
- Unusual increase or decrease in flow of springs

WHAT YOU CAN DO

Landslides on slopes and bluffs often are started by human actions. Always use maximum construction setbacks on steep slopes and bluffs and follow these tips as a wise property owner.

DRAINAGE

- Don’t discharge water over steep slopes
- Don’t irrigate or put septic drain fields above slopes
- Don’t change natural drainage
- Collect surface water from gutters and driveways and drain it away from slopes

VEGETATION

- Maintain and retain native vegetation and ground cover on slopes (replant if bare)
- Consult your local planning department and a licensed geologist before removing vegetation from steep slopes

REGULAR MAINTENANCE

- Inspect plumbing and drains for leaks
- Don’t dump garbage or yard debris on slopes
- Inspect and maintain underground drainage and sprinkler systems

